**CS 210-301 (Introduction to Networking-Fall 2024)**

**General Information**

**Contact Your Instructor**

**Name:** Shahab S. Band

**Email:** shahab.shamshirband@indstate.edu

Office:

Lecture, Exam, Office Hours

This is an online asynchronous class: no meeting time.  Instructor prefers communication via zoom and email.

**Final Exam:** Details will be provided later.

**Instructor Office Hours:**

**Website:** There is a Blackboard Site for the course.

**Useful Networking Texts and Theses**

**General**

 "Computer Networking, 7th ed " by James Kurose and Keith  Ross, Pearson, 2016. ISBN-13: 978-0133594140

Kurose, J., and K. Ross. *Computer Networking: A Top-Down Approach Featuring the Internet*. Reading, MA: Addison Wesley Longman, 2002. ISBN: 0201976994.

Keshav, S. [An Engineering Approach to Computer Networking](http://www.cs.cornell.edu/home/skeshav/book/slides/). 1st ed. Reading, MA: Addison-Wesley, 1997. ISBN: 0201634422.

Walrand, Jean. *Communication Networks: A First Course*. Mc Graw Hill, 1998. ISBN: 0256174040.

Tanenbaum, Andrew. *Computer Networks*. 3rd ed. Upper Saddle River, NJ: Prentice Hall. ISBN: 0133499456. ([Search](http://vig.prenhall.com/search) for Tanenbaum on the Prentice Hall site).

Bertsekas, Dmitri, and Robert Gallager. *Data Networks*. 2nd ed. Upper Saddle River, NJ: Prentice Hall, 1991. ISBN: 0132009161. ([Search](http://vig.prenhall.com/search) for Bertsekas on the Prentice Hall site).

Partridge, Craig. *Gigabit Networking*. Reading, MA: Addison Wesley, 1993. ISBN: 0201563339.

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**Course Announcements**

You should regularly check the BlackBoard course site for Readings, Assignments and Announcements.The Learning Modules and Announcements sections will have have this information.

**Course Description**

The official description of this course from the catalog is :

 Topics include network types and communication models, hardware components, applications, protocols, standards, internetworking and routing concepts, OSI Model, TCP/IP, LAN and WAN networking technologies.

**Course Outline**

The course covers all aspects of computer networking.

**Normal Content**

Section 1: **Introduction**

1. Introduction to Basic Networking Concepts
2. LAN: Local Area Networks, including Hubs, Bridges, and Switches
3. Understanding the OSI Model
4. Layer 2 BUM Traffic: Broadcast, Unknown Unicast, Multicast
5. Layer 3: What are Routers?
6. Breaking Down IP Addresses and Subnets
7. Packet Walk - Follow a packet through the network!
8. VLANs: Virtual Local Area Networks
9. WAN: Wide Area Networks
10. IPSEC VPN: Virtual Private Networks
11. Layer 2 VPN
12. Understanding Redundancy
13. Basic Network Troubleshooting Methodology
14. DHCP: Dynamic Host Control Protocol
15. NAT, Public IP Addresses, and Private IP Addresses
16. WiFi
17. Netflow and IPFIX
18. Network Time Protocol (NTP)

Section 2: **IP Addressing and Subnetting**

1. Introduction
2. Overview of IP addressing
3. Types of IP addresses: Public vs. Private
4. Understanding IPv4 address structure
5. Classful vs. Classless addressing
6. Converting decimal to binary and binary to decimal
7. Why is 255 special?
8. Why is subnetting necessary?
9. Working with Subnets and CIDR Notation
10. How Many Hosts in a Subnet?
11. Hands-On Practice with Subnets and CIDR Notation
12. Breaking Networks Into Smaller Subnets
13. Network address, Broadcast address, and Default Gateway

**Learning Outcomes**

After completing the course, the student should be able to explain Computer Netwoking Concepts.

The final grade consists of:

Assignments: 20% total. There will be 4

You may talk with other students about the assignments. But you must list the names of these students at the top of your assignment, and you must write up your assignments separately. Copying is not permitted.

Any other source, e.g. books/websites, must be referenced at the top of the assignment. Copying is not permitted.

If you worked alone, write "I worked alone." at the top of your assignment.

Midterm: 20% total.

Tutorials and Quizzes ( 25 %) (Every other week there is a tutorial and a quiz)

Being active and Friendly (10 % )

Final: 25% total.

**Late Homeworks**

Each homework task will receive a recommended deadline. While submissions beyond this recommended deadline are acceptable, their points will be reduced by 20% (resulting in a maximum achievable grade of 80%). Assignments extensively covered during class discussions will be considered closed, and no credit will be awarded for them.

Grade Cutoffs

A+       90 – 100

A         85 – 89

A-        80 – 84

B+       75 – 79

B         70 – 74

B-        65 – 69

C+       60 – 64

C         55 – 59

F          0   – 54

**Blackboard**

The course has a blackboard site. Click https://blackboard.indstate.edu/ to go to blackboard. You should see this course listed under your courses for the current term. The blackboard site is only used for giving you your grades. All course content, schedule, etc. will be posted on the course website.

**Academic Integrity**

To ensure adherence to principles of academic integrity within this course, kindly adhere to the subsequent instructions:

Homework Assignments: While discussions regarding homework tasks are permissible, the resolution and completion of said assignments should be an independent effort.

Source Acknowledgment: In cases where external sources, including online resources, are consulted, proper citation is imperative. Failure to do so would constitute plagiarism.

Examinations: The utmost honesty is expected during examinations. These assessments will be conducted under closed-book and closed-notes conditions, with no access to computers or calculators. Cheating is strictly prohibited.

If cheating is observed, you will at the least receive a 0 for the assignment (and may receive an F for the course), and I will file a Notification of Academic Integrity Violation Report with Student Judicial Programs, as required by the university's policy on Academic Integrity. A student who is caught cheating twice (whether in a single course or different courses) is likely to be brought before the All-University Court hearing panel, which can impose sanctions up to and including suspension/expulsion. See the http://www.indstate.edu/sjp/docs/code.pdf and http://www.indstate.edu/academicintegrity/ for more information.

Please ask the instructor if you have doubts about what is considered cheating in this course.

Disclosures Regarding Sexual Misconduct

Indiana State University fosters a campus free of sexual misconduct including sexual harassment, sexual violence, intimate partner violence, and stalking and/or any form of sex or gender discrimination.  If you disclose a potential violation of the sexual misconduct policy I will need to notify the Title IX Coordinator.  Students who have experienced sexual misconduct are encouraged to contact confidential resources listed below.  To make a report or the Title IX Coordinator, visit the Equal Opportunity and Title IX website:  http://www.indstate.edu/equalopportunity-titleix/titleix.

The ISU Student Counseling Center – HMSU 7th Floor | 812-237-3939 |  www.indstate.edu/cns

The ISU Victim Advocate – Trista Gibbons, trista.gibbons@indstate.edu

HMSU 7th Floor | 812-237-3939 (office)  |  812-230-3803 (cell)

Campus Ministries - United Campus Ministries | 812-232-0186

                                    http://www2.indstate.edu/sao/campusinistries.htm

www.unitedcampusministries.org | ucmminister2@gmail.com

321 N 7th St., Terre Haute, IN  47807

For more information on your rights and available resources http://www.indstate.edu/equalopportunity-titleix/titleix